Algebra 2H   12-6 and 12-7 Review and Math Induction   HW #_____
Do # 1-3 on this paper. Do #4-5 on your own paper (do not do them on the back).

1. An automobile safety researcher claims that 3 out of 10 automobile accidents are caused by distracted drivers. Find the probability (to the nearest thousandth) that:
a) exactly 3 out of 5 accidents are caused by distracted drivers

b) at least 3 out of 5 accidents are caused by distracted drivers

2. The heights of adult Great Danes are normally distributed with a mean of 31 inches and a standard deviation of 1 inch. Find the probability (to the nearest thousandth) that:
a) a randomly selected Great Dane is between 29 and 33 inches tall

b) 4 randomly selected Great Danes are at most 33 inches tall

3. Suppose that a California poll showed that 75% of all households had cable or satellite TV service. In a random survey of 600 households, what would the probability be that at least 428 households had cable or satellite TV? Round the answer to the nearest thousandth.

Prove by mathematical induction:

4. $\sum_{i=1}^{n} 2i = n^2 + n$

5. $\sum_{i=1}^{n} 2i - 1 = n^2$

Answers: 1a) .132   b) .163   2. a) .950   b) .904   3. .975